

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554**

**Via Electronic Filing**

In the Matter of	)	
	)	
Use of Spectrum Bands Above 24 GHz For	)	GN Docket No. 14-177
Mobile Radio Services	)	
	)	
Establishing a More Flexible Framework to	)	IB Docket No. 15-256
Facilitate Satellite Operations in the 27.5-28.35	)	
GHz and 37.5-40 GHz Bands	)	
	)	
Petition for Rulemaking of the Fixed Wireless	)	RM-11664
Communications Coalition to Create Service	)	
Rules for the 42-43.5 GHz Band	)	
	)	
Amendment of Parts 1, 22, 24, 27, 74, 80, 90, 95,	)	WT Docket No. 10-112
and 101 To Establish Uniform License Renewal,	)	
Discontinuance of Operation, and Geographic	)	
Partitioning and Spectrum Disaggregation Rules	)	
and Policies for Certain Wireless Radio Services	)	
	)	
Allocation and Designation of Spectrum for	)	IB Docket No. 97-95
Fixed-Satellite Services in the 37.5-38.5 GHz,	)	
40.5-41.5 GHz and 48.2-50.2 GHz Frequency	)	
Bands; Allocation of Spectrum to Upgrade Fixed	)	
and Mobile Allocations in the 40.5-42.5 GHz	)	
Frequency Band; Allocation of Spectrum in the	)	
46.9-47.0 GHz Frequency Band for Wireless	)	
Services; and Allocation of Spectrum in the 37.0-	)	
38.0 GHz and 40.0-40.5 GHz for Government	)	
Operations	)	

**OPPOSITION OF STARRY, INC. TO PETITIONS OF RECONSIDERATION**

Starry, Inc. (“Starry”) respectfully submits its opposition to the petitions for reconsideration filed in the above referenced matters, also referred to as the *Spectrum Frontiers Report & Order*.<sup>1</sup> The Commission took a thoughtful, measured and reasoned approach in developing its July 2016 *Report & Order*, a result of a years-long effort to unleash new bands of spectrum in order to speed investment in and development of “5G” or next generation communications technology. Through its work on the Spectrum Frontiers proceeding, the Commission once again solidified the United States as a global leader in fostering communications innovation, taking long-ignored spectrum bands and promulgating rules that would put them to practical and immediate use. The *Report & Order* opened up 10.85 GHz of spectrum for flexible use and innovation; struck an even balance with federal partners to ensure that federal use was protected, but not at the expense of new technology innovation; clarified rules and performance requirements for license holders; opened up bands for more flexible uses; and importantly, created a framework that would enable a healthy and competitive spectrum marketplace, which Starry believes will spur investment and economic growth in communities across the country.

In their petitions for reconsideration, petitioners offer a host of recycled arguments that the Commission has already considered and rejected. The extensive record submitted before the Commission is ample evidence of the support that exists for the current *Report & Order*. We respectfully urge the Commission to continue on this path and not reverse course, and we urge you to deny or dismiss the petitions for reconsideration in this matter.

**I. THE COMMISSION TOOK A MEASURED AND BALANCE APPROACH TO SPECTRUM LICENSING AND DYNAMIC SHARING IN THE LOWER 37 GHZ BAND SEGMENT SHOULD BE PRESERVED**

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<sup>1</sup> FCC Report & Order, GN Docket Number 14-177, (Released July 14, 2016).

Starry strongly opposes any efforts to limit licensing in the 37 GHz band to an exclusively-licensed only model. Starry supports the balanced approach put forward in the *Report & Order* that includes sharing, exclusively-licensed and unlicensed models for the 37 GHz, 39 GHz and 57-64 GHz bands. The availability of spectrum is one of the biggest drivers of modern wireless technology and arguably, one of our country's most valuable natural resources. Eliminating a diverse set of licensing models would have the effect of concentrating spectrum into the hands of one or two licensees, while simultaneously cutting off the spigot of innovation that would have been created by new entrants. Starry fully supports the implementation of dynamic sharing in the Lower 37 GHz band segment.

Promoting a variety of licensing models ensures that spectrum does not become consolidated into the hands of one or two players and discourages the warehousing of spectrum. Additionally, 5G networks and technologies are still in their infancy. A diverse set of licensing models means that a wide range of companies can innovate in these bands, investing in the development of new hardware and equipment, as well as pioneering new business models and services to the benefit of consumers. Opening spectrum to more participants enables a much faster hardware and equipment innovation cycle as these technologies continue to be developed. Certain petitioners argue that implementing a sharing regime in the Lower 37 GHz band segment would stifle innovation and reduce the value and utility of the band.<sup>2</sup> Starry believes the opposite is true and the success of Starry's initial beta in Boston, demonstrating its gigabit-capable, fixed wireless broadband network in a real-world, urban topography, is a testament to the power of these spectrum bands to provide consumers with another choice for reliable, affordable broadband access. Access to spectrum, and the technologies that emerge as a result,

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<sup>2</sup> Petition for Reconsideration of Competitive Carriers Association, GN Docket Number 14-177 (filed December 14, 2016) at 6-7.

will be a major driver in helping bridge the digital divide that exists in communities across the United States.

Certain mobile carriers and those representing mobile carriers repeat the same arguments against dynamic sharing that were rejected in the 3.5 GHz proceeding, focusing narrowly on mobile interests and ignoring other uses in these bands, namely fixed wireless broadband applications.<sup>3</sup> Certain petitioners argue, unsuccessfully, that because the Commission has set aside spectrum in the 57-64 GHz band as unlicensed, that it is unnecessary to utilize the Lower 37 GHz band segment for dynamic sharing, ignoring the fact that band performance characteristics are different between these two bands and that the power transmission rules for operation in the unlicensed band restrict power output, limiting the range that can be achieved, as compared to operational rules for the “license by rule” shared band. It is not an apples-to-apples comparison and does not support doing away with the Commission’s balanced approach of including an exclusive, shared and unlicensed spectrum framework in the *Report & Order*.

Enabling federal use of the Lower 37 GHz band segment is a critical component to the success of the sharing scheme. Starry believes that federal users should be designated as co-primary status with authorized non-federal users. In a true dynamic sharing structure, federal users have flexibility to participate as co-primary licensees or as a general access licensee on transient use. Starry believes that this structure enables more flexibility for federal users to utilize the lower band when they need it and supports transient use cases without unnecessarily tying up lower band spectrum that remains unused. This approach would serve the public interest and ensure that this spectrum is put to its maximum use.

Certain petitioners asked the Commission to reconsider or clarify these federal sharing issues to address the fear of unbounded federal expansion in the band, in order to protect

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<sup>3</sup> Petition for Reconsideration of T-Mobile USA, Inc., GN Docket Number 14-177 (filed December 14, 2016) at 3-7.



commercial licensees and federal users alike.<sup>4</sup> Starry agrees that the rules governing sharing with federal partners should be clarified to make clear that first-in-time rights would apply to the Lower 37 GHz band segment. This would create much needed certainty for companies making investments in the sharing segment, while also preserving the ability for federal partners to participate as co-primary or general access licensees, without dislodging or forcing out commercial licensees. Starry believes that licensing by rule is, in fact, adequate to build out networks, so long as the sharing rules are clarified to protect network build out investments.

The spectrum licensing trinity of shared, unlicensed and exclusively-licensed spectrum is the right balance to foster innovation in these millimeter wave bands to drive the next generation of communications technology – both for wireless and fixed applications. It is to the consumer's benefit and in the broader public interest to ensure that this spectrum is put to wide use and not consolidated into the hands of a few. Millimeter wave spectrum is the new frontier and we are just beginning to scratch the surface of what is possible. There will not be one single approach to technology development in these bands, nor will we see one single use case that emerges. What will emerge is a vibrant and competitive marketplace of services and devices. The idea of limiting the potential of these bands and who can participate in innovating the future is an anathema to what the Commission set out to accomplish in its adoption of the *Report & Order*. Starry respectfully urges the Commission to retain sharing in the Lower 37 GHz band segment and reject petitioner's calls for an exclusive-only, one-size-fits-all licensing model.

## **II. INTEROPERABILITY REQUIREMENTS FOR 37-40 GHZ ARE IMPORTANT TO PRESERVING FLEXIBILITY IN THE BAND, WILL CREATE LONG-TERM EFFICIENCIES AND SPUR INNOVATION**

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<sup>4</sup> Petition for Reconsideration of The Telecommunications Industry Association, GN Docket Number 14-177 (December 14, 2016) at 4-5.

In the *Report & Order*, the Commission mandated an interoperability requirement in the 37-40 GHz band that would require a “device operating in either band must be capable of operating across the entirety of both bands.”<sup>5</sup> Several petitioners have urged the Commission to rethink this interoperability requirement, citing the as-of-yet finalized sharing rules as a reason to jettison or delay the requirement.<sup>6</sup> Starry supports the implementation of an interoperability requirement set forth by the Commission, as we believe that interoperability within these bands will spur innovation in the development of equipment and achieve long-term manufacturing efficiencies as a result. Implementing an interoperability requirement will also open up a wider marketplace of available network devices and equipment available to wide range of telecommunications companies. We agree with petitioners that it would be helpful to seek further comment on interoperability rules and how they would work across both licensed and shared bands and clarify issues that petitioners have raised as concerns.<sup>7</sup>

Starry’s fixed wireless broadband technology was developed to be band agnostic, operable in a wide range of frequencies, including 37 to 40 GHz. We do not believe the current interoperability rule will prevent any future development or slow the deployment of network equipment or devices. Starry is a real-world example of how technology companies and engineers can step-up to meet those requirements and as a result, develop technologies that will have meaningful impact in pushing forward, more quickly, development of this next generation equipment.

Additionally, over the long term, the 38.6 to 40 GHz spectrum bands will require repacking. Having the ability to incorporate a wider set of bands, from 37.0 to 40 GHz will enable additional flexibility in the band for licensees, in both the sharing and exclusively-

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<sup>5</sup> FCC Report & Order, GN Docket Number 14-177 (Released July 14, 2016) ¶¶ 322-323

<sup>6</sup> Petition for Reconsideration of Competitive Carriers Association, GN Docket Number 14-177 (December 14, 2016) at 14-15.

<sup>7</sup> Petition for Reconsideration of The Telecommunications Industry Association, GN Docket Number 14-177 (December 14, 2016) at 7.

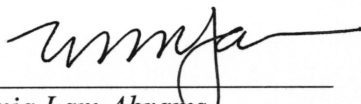
licensed portions of the band, to cooperatively work together on repacking and repositioning as necessary, without fear of blocking, service discontinuation or repositioning to an incompatible frequency.

### III. CONCLUSION

It is clear: the future of connectivity will be driven by availability and access to spectrum. Starry applauds the Commission for its commitment to unleashing spectrum and putting it in the hands of companies that will put that spectrum to work for the benefit of consumers and to speed the development of next generation communications technologies that will power our economy, create jobs and close the digital divide. The Commission's July 2016 *Report & Order* was the first bold and major step towards fulfilling this promise and we urge the Commission to continue down this path to ensure that the United States remains a leader in next generation communications technology.

Respectfully submitted,

Starry, Inc.

By:   
Virginia Lam Abrams  
Senior Vice President, Communications &  
Government Relations  
Starry, Inc.  
38 Chauncy Street, 2<sup>nd</sup> Floor  
Boston, Massachusetts 02111

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